	Application No.	Applicant(s)
Notice of Allowability	10/824,899	UNSWORTH ET AL.
	Examiner	Art Unit	
	Wilbert L. Starks, Jr.	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amendment filed 03/29/2005*.

2. ☒ The allowed claim(s) is/are *1,2,5-10,13-26 and 31-41*.

3. ☒ The drawings filed on *15 April 2004* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some*   c)☐ None   of the:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

         3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

     * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

     (a)☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

         1)☐ hereto or 2)☐ to Paper No./Mail Date _____ .

     (b)☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

         Paper No./Mail Date _____ .

     Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

Reasons For Allowance

1.   Claims 1-2, 5-10, 13-26, and 31-41 are allowed.

2.   The following is an Examiner's statement of reasons for allowance:

The cited prior art taken alone or in combination fails to teach the claimed

invention of detecting pump cavitation/blockage and seal failure, as claimed by

Applicant. Specifically, independent claims 1, 9, 19, 26, 32, 33, and 36 disclose the use

of a "one-shot" neural network for this purpose.

3.   The closest prior art of Ilott, P.W., et al teaches the use of neural networks for the

development of a pumping system decision support tool, but fails to teach or suggest

the use of a "one-shot" neural network. To the extent that this feature is not present in

the prior art cited by Examiner, the present case is found to be allowable over the art of

record.

4.   Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

5.   This application is in condition for allowance except for the following formal

matters:

6.   Claims 29 and 30 are dependent upon cancelled claim 28. If these claims are

either cancelled or made dependent upon one of the independent claims already

allowed in this case above, the defect will be cured (aside from having to renumber the

claims to reflect the changes.)

7.   Prosecution on the merits is closed in accordance with the practice under *Ex*

parte Quayle, 1935 C.D. 11, 453 O.G. 213.

8.   A shortened statutory period for reply to this action is set to expire **TWO**

MONTHS from the mailing date of this letter.

9.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (571)

272-3691.

Alternatively, inquiries may be directed to the following:

S. P. E. Anthony Knight   **(571) 272-3687**

After-final (FAX)   **(703) 746-7238**
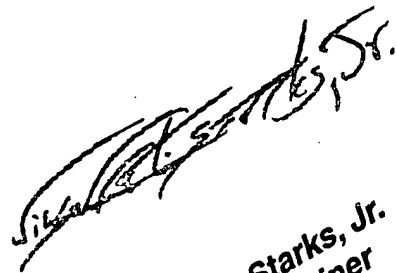
Official (FAX)   **(703) 746-7239**

Non-Official/Draft (FAX)   **(703) 746-7240**

WLS

17 April 2005

Wilbert L. Starks, Jr.
Primary Examiner
Art Unit - 2121